BRIEF REPORTS

Neuroleptic Malignant Syndrome and Lithium Carbonate

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The authors describe a case of neuroleptic malignant syndrome that occurred in a patient on amitriptyline and lithium carbonate. They suggest that lithium-antidepressant combination can precipitate this syndrome. Intestinal pseudo-obstruction was a prominent feature in the patient in this study.

Key Words: neuroleptic malignant syndrome, lithium

INRODUCTION

A 61-year-old male with a 12 year history of bipolar affective disorder presented with an acute hypomanic relapse (corresponding to 296.2 of the ICD-9 part V classification). He had received neuroleptics on several previous occasions, had no other medical disorder, and had normal results from liver function tests. He was admitted to a psychiatric hospital and was started on chlorpromazine 25 mg tds. Seven days later, when his hypomanic manifestations had subsided, chlorpromazine was stopped and amitriptyline 25 mg tds and lithium carbonate 300 mg tds were started. After another week, he was transferred to St. Luke's Hospital with impaired consciousness, a pyrexia of 39.5°C, extreme rigidity of the limbs, neck and abdominal muscles, as well as prominent cogwheeling at the wrists. The abdomen was distended and tympanitic; bowel sounds were sluggish. A plain X-ray confirmed gaseous distension of the small and large intestines. A peak creatine kinase activity of 715 μl was reached 24 hours after admission. Serum chlorpromazine level was undetectable on admission. CT scan of the brain was normal.

The patient was started on bromocriptine, a levodopa-carbidopa combination, and low-dose subcutaneous heparin. Abdominal distension resolved completely within 20 hours, the level of consciousness returned to normal within 24 hours, and core temperature returned to normal within 30 hours. Colonoscopy was normal.

Neuroleptic malignant syndrome (NMS) is an idiosyncratic, potentially fatal reaction to neuroleptics with an estimated incidence of 1.4% (Pope et al 1986). It usually develops while the patient is on neuroleptics. In the patient in this study, NMS occurred seven days after stopping neuroleptics (no depot preparations were used) and starting lithium therapy. Susman and Addonizio (1987) have reported a case of reinduction of NMS with lithium. However, other authors (Baastrup et al 1976; Deng et al 1990) have found no association of NMS to lithium therapy. There have also been reports of a possible association of lithium to NMS in patients with Parkinson's disease (Pfeiffer and Suscha 1985; Koehler and Mirandolle 1988). Tricyclic antidepressants can rarely cause NMS (Baca and Martinelli 1990). This report

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postulates that lithium-antidepressant combination can precipitate NMS, especially in those patients who are, or have recently been, on neuroleptics. It is possible that lithium predisposes to NMS by enhancing the dopamine-blocking action of neuroleptics. It should be noted that NMS has occurred with drugs such as clozapine that normally have minimal extrapyramidal effects (Redding et al 1993; Miller et al 1991).

The patient in this study had intestinal pseudo-obstruction as a prominent feature. To the knowledge of the authors, this condition has not been previously described in NMS. Although it is possible to attribute its occurrence to the administration of amitriptyline, its course closely paralleled the other features of NMS. This finding suggests that the obstruction is part of the generalized autonomic nervous system dysfunction of NMS.

Finally, the patient responded favorably to treatment which consisted of bromocriptine and a levodopa-carbidopa combination. Subcutaneous heparin was used in order to minimize the risk of thromboembolism in view of prolonged immobilization.

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